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a short-range LPRF wireless data communication unit and a short range radio frequency antenna for data communication;  
a memory for storing the communicated data; and  
means for giving to the microcontroller an operation enable signal enabling the operation of the data communication device when the memory is processed by the electronic device, and a busy signal when the LPRF unit is occupied for data communication.

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REMARKS

1. Claims 1-12 remain in the application. Claims 1 and 8 have been amended to further clarify the features of the invention. Claims 1-12 have been amended to correct awkward wording and to correct informalities by eliminating the term "characterised." Claim 4 has been amended to define "LPRF" to overcome a 35 USC 112, second paragraph rejection. Claims 6, 7, 11, and 12 have been amended to include the base claim and any intervening claims from which they depend.

The Abstract of the Disclosure has been amended to comply with MPEP 608.01(b).

The amendments to correct awkward wording and informalities, to overcome the 35 USC 112 rejection, and the amendments to claims 6, 7, 11, and 12 are not limiting, are not made for reasons related to patentability, and do not raise issues of estoppel.

A marked-up version of the rewritten section and claims is attached hereto.

2. The Declaration and Power of Attorney was objected to as being defective. A new Declaration and Power of Attorney has been sent to the inventors for execution and will be submitted when execution is complete.

3. Applicants wish to express their appreciation for the indication that claims 6, 7, 11, and 12 would be allowable if amended to include the base claim and any intervening claims from which they depend. Claims 6, 7, 11, and 12 have been amended accordingly and are in condition for allowance.

4. Claims 1-5 and 8 are not anticipated by Charlton (US 5,929,774).

Charlton fails to disclose a data communication device, having means for short-range wireless data communication, mounted in a general purpose expansion memory location of an electronic device, as recited in Applicants' claims 1 and 8.

Charlton also fails to disclose activating a short-range radio frequency wireless data communication link between the wireless device and the data communication device, as recited in Applicants' claims 1 and 8.

The present invention relates to a method and a communication device for a short-range transfer of data as based on radio frequencies. Such a device is connectable into any electronic device that has a compatible socket for a memory card for general-purpose use, enabling the electronic device to communicate over a short distance.

The term "communication device" in the context of the present invention is described in the application as a short distance

communication device, which may be coupled to a generally utilized memory slot of an electrical device.

Applicants respectfully submit that Charlton fails to teach or suggest the features of Applicants' invention. Charlton mentions a part 58, which is described as a memory unit. The unit 58 may be expandable, as understood from column 6, lines 34-35. However, Charlton fails to disclose any general-purpose expansion memory location. While Charlton may mention a pager and also a telephone line, shown as item 50 in Figure 1, data transfer is accomplished using wired technology, as opposed to short range radio frequency wireless data communication, as called for in Applicants' claims.

Item 50 is indicated for connecting the pager to a telephone line, whereas in the embodiments of the present invention the communication device is connectable to an electronic device, into its general-purpose expansion memory location as described in the application text, to achieve a wireless data transfer facility for the electronic device.

At least for these reasons, Applicants respectfully submit that Charlton fails to anticipate claims 1 and 8. Claims 2-5 depend from claim 1 and therefore are also not anticipated by Charlton.

5. Claims 8, 9, and 10 are not anticipated by Erkkila et al. (US 6,219,560, hereinafter "Erkkila").

Erkkila fails to disclose a data communication device, having a controller connectable to a general purpose interface of an expansion memory location of an electronic device, for controlling the operation of the electronic device, as recited in Applicants' claim 8.

Erkkila also fails to disclose another feature of Applicants' claim 8, that is, a short-range radio frequency wireless data communication unit and a short range radio frequency antenna for data communication.

Figure 5 of Erkkila shows an item 50, disclosed as a miniature card interface, in column 6, lines 23-24. Erkkila discloses that the miniature card interface is for interfacing, for example, a camera (column 5, line 64) to a communication device, however, Erkkila discloses entirely different techniques from the embodiments of the present invention.

There is no disclosure in Erkkila related to a communications device to be coupled into the socket of an electronic device, to obtain a wireless data transfer capability for the electronic device. There is only disclosure related to the miniature card, inserted into a mobile communication device and operating as an interface to bulkier or larger components. The example shown in Erkkila relates to camera electronics included in the miniature card that interface to a separate optical unit 65 through a cable 24.

At best, the disclosure of Erkkila may describe a device that may benefit from the use of Applicants' invention if it could be applied, but Erkkila does not describe the present invention itself nor any of its embodiments. Erkkila appears to simply describe a device that has a card socket.

The embodiments of the present invention relate to a communication device that can be attached to a place reserved for a memory card, enabling a wireless, short distance communication facility for the device.

This is in contradistinction to the techniques in Erkkila which relate only to wired technology, as pointed out by the Examiner when referring to column 5, lines 34-39. The solution described in Erkkila is contrary to the present invention, that is, in Erkkila, an expansion card is coupled to a camera module via a cable, and then the expansion card, camera assembly is coupled to a mobile terminal.

In the embodiments of the present invention, a communications device includes a means for short distance communications for communicating with a mobile terminal. The communications device could, for example, be coupled directly to an electrical device having a space for a memory card, enabling information transfer between the electrical device (a camera for instance), and a mobile terminal.

The Office Action maintains that Figure 5 of Erkkila describes the key aspects of claim 8. Applicants' respectfully disagree. For example, Erkkila's Figure 5 shows a block diagram of a normal communications device, and such components as the antenna 59 and the memory 53 that are parts of the mobile terminal. Only item 50, the interface block, seems to be usable for coupling to another device, however, item 50 has no wireless capability. Therefore, Figure 5 fails to disclose or suggest any short-range wireless data communication unit and fails to disclose or suggest an antenna for data communication.


At least for these reasons, Applicants respectfully submit that Erkkila fails to anticipate Applicants' claim 8. Claims 9 and 10 depend from claim 8 and therefore are also not anticipated by Erkkila.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$252.00 is enclosed for the additional claim fees.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

  
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2/28/2003  
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Marked Up Specification Replacement Section

Abstract of the Disclosure

~~The object of the invention is a particular~~ A memory card (8) mounted in a general purpose ATA expansion memory location (9) in a separate electronic device, such as a high-class digital camera ~~(10)~~, ~~whereby the memory card contains~~ includes a data communication feature for transmitting the memory contents to a mobile station ~~(5)~~. Expansion cards containing memory which can be written and read are called Compact Flash, in accordance with the Flash EEPROM memory contained in small-sized cards. The data communication is performed on a short-range, low power radio frequency (LPRF) link. The memory card (8) ~~is also~~ applicable for instance in a personal digital PDA notebook, where the input data can be stored in an expansion memory. The duplex feature of the expansion memory enables the data to be transmitted at a radio frequency to a mobile station. The data communication features of the wireless device ~~(5)~~ are available for forwarding the data.

~~Figure 2~~

Marked Up Claims

1. (Amended) A method for wireless data communication between a wireless device, ~~which comprises~~ having means for short-range data communication, and an electronic device, ~~characterised in that the method includes the following method steps~~ comprising:

~~in general purpose expansion memory location of the electronic device there is mounted~~ mounting a data

communication device having means for short-range wireless data communication in a general purpose expansion memory location of the electronic device;

activating a short-range radio frequency wireless data communication link between the wireless device and the data communication device~~-is activated;~~ and

transmitting data ~~is transmitted~~ between the data communication device and the wireless device.

2. (Amended) A method according to claim 1, ~~characterised in that~~wherein in order to enable the data transmission from the electronic device to the wireless device the following method steps are performed after the installation of the data communication device and before the activation of the data communication link:

inputting data ~~is input~~ to the electronic device; and

processing the data ~~is processed~~ in the data communication device installed in an expansion memory location.

3. (Amended) A method according to claim 2, ~~characterised in that~~wherein the data processing in the data communication device is made by instructions from the electronic device.

4. (Amended) A method according to claim 1, ~~characterised in that~~wherein the data communication between the data communication device and the wireless device is made over an ~~ana~~ low power radio frequency (LPRF) link.

5. (Amended) A method according to claim 1, ~~characterised in that~~that wherein the data communication between the data



communication device and the wireless device is made on the basis of instructions given by the wireless device.

6. (Amended) ~~A method according to claim 1, characterised in that~~ for wireless data communication between a wireless device having means for short-range data communication, and an electronic device, the method comprising:

mounting a data communication device having means for short-range wireless data communication in a general purpose expansion memory location of the electronic device;

activating a short-range wireless data communication link between the wireless device and the data communication device; and

transmitting data between the data communication device and the wireless device,

wherein the data communication between the data communication device and the wireless device is made automatically on the basis of the logic of the data communication device so that it is activated by the storage of data.

7. (Amended) ~~A method according to claim 2, characterised in that~~ for wireless data communication between a wireless device having means for short-range data communication, and an electronic device, the method comprising:

mounted a data communication device having means for short-range wireless data communication in a general purpose expansion memory location of the electronic device;

activating a short-range wireless data communication link between the wireless device and the data communication device; and

transmitting data between the data communication device and the wireless device,

wherein in order to enable the data transmission from the electronic device to the wireless device the following method steps are performed after the installation of the data communication device and before the activation of the data communication link:

inputting data to the electronic device; and

processing the data in the data communication device installed in an expansion memory location, wherein the input data is a picture reflected as light through the objective of a camera.

8. (Amended) A <sup>data</sup> communications device for wireless data communication between a wireless device, which has means for a short-range data link, and an electronic device, ~~characterised in that~~ the data communication device ~~comprises~~ comprising:

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a controller connectable to a general purpose interface of an expansion memory location of the electronic device, for controlling the operation of the data communication device,

a short-range radio frequency wireless data communication unit and ~~ana~~ a short range radio frequency antenna for data communication; and

a memory for storing the communicated data.

9. (Amended) A data communication device according to claim 8, ~~characterised in that~~wherein the controller of the data communication device comprises:

a serial to parallel converter for converting parallel mode information of the memory into serial mode used by the short-range data communication unit, and correspondingly the serial mode information into the parallel mode;

a splitter for connecting a parallel mode write and read connection of the memory alternatively to the interface of the expansion memory location of the electronic device or to the serial to parallel converter for a short-range data communication link; and

a microcontroller for controlling the serial to parallel converter and the splitter.

10. (Amended) A data communication device according to claim 8, ~~characterised in that~~wherein the short-range data communication unit is ~~aan~~ LPRF unit.

11. (Amended) A <sup>data</sup>~~data~~ communication device ~~according to claim 10, characterised in that it comprises~~for wireless data communication between a wireless device, which has means for a short-range data link, and an electronic device, the data communication device comprising: 117

a controller connectable to a general purpose interface of an expansion memory location of the electronic device, for controlling the operation of the data communication device;

a short-range LPRF wireless data communication unit and a short range radio frequency antenna for data communication;

a memory for storing the communicated data; and

means for supplying a busy signal to the electronic device when the memory is processed by the radio link, and a busy signal to the LPRF unit when the memory is processed by the electronic device.

12. (Amended) A <sup>data</sup> ~~data~~ communication device ~~according to claim 10, characterised in that it comprises~~ for wireless data communication between a wireless device, which has means for a short-range data link, and an electronic device, the data communication device comprising: 11/2

a controller connectable to a general purpose interface of an expansion memory location of the electronic device, for controlling the operation of the data communication device;

a short-range LPRF wireless data communication unit and a short range radio frequency antenna for data communication;

a memory for storing the communicated data; and

means for giving to the microcontroller an operation enable signal enabling the operation of the data communication device when the memory is processed by the electronic device, and a busy signal when the LPRF unit is occupied for data communication.